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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,125	02/27/2002	Izhak Baharav	10010314-1	2242

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[REDACTED] EXAMINER

YAM, STEPHEN K

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2878

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/086,125	BAHARAV ET AL
Examiner	Art Unit	
Stephen Yam	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 21 May 2003.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-19 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 February 2002 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Claims 1-19 in Paper No. 4 is acknowledged. Claims 1-19 are currently pending.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokota et al. UK Patent Application No. 2,166,289.

Regarding Claim 1, Yokota et al. teach (see Figs. 1 and 2) a sensor comprising a two-color photo-detector having a first photo-detector element (PD1- (28, 29, 30)) (see Page 3, lines 44-48) capable of absorbing light within a first range of wavelengths (see Page 3, lines 56-60) and a second photo-detector element (PD2- (22, 23, 24)) capable of absorbing light within a second range of wavelengths (see Page 3, lines 60-62), said first photo-detector element being in an elevated relation with the second photo-detector element, the first photo-detector element being electrically isolated (see Fig. 2 and insulating film (26) in Fig. 1) from said second photo-detector element.

Regarding Claim 14, Yokota et al. teach (see Figs. 1 and 2) a sensor comprising a two-color photo-detector having a first photo-detector element (PD1- (28, 29, 30)) (see Page 3, lines

44-48) capable of absorbing light within a first range of wavelengths (see Page 3, lines 56-60), a second photo-detector element (PD2- (22, 23, 24)) capable of absorbing light within a second range of wavelengths (see Page 3, lines 60-62), said first photo-detector element being in an elevated relation with the second photo-detector element, and a dielectric layer (26) between said first photo-detector element and said second photo-detector element.

Regarding Claims 2 and 15, Yokota et al. teach (see Fig. 1) a substrate (21), said second photo-detector element being formed within said substrate.

Regarding Claim 3, Yokota et al. teach (see Fig. 1) a dielectric layer (26) between said first photo-detector element and said second photo-detector element, said dielectric layer electrically isolating said first photo-detector element from said second photo-detector element.

Regarding Claims 4 and 16, Yokota et al. teach the first photo-detector element formed of amorphous silicon (see Page 3, lines 10-13) having a thickness selected (see Page 3, lines 29-30) selected to absorb light within said first range of wavelengths (see Page 3, lines 56-60) and pass light within said second range of wavelengths (i.e.- not absorbed) (see Page 2, lines 109-114 and Page 3, lines 56-63), said second photo-detector detecting light within said second range of wavelengths (see Page 3, lines 60-62) passed by said first photo-detector element (see Page 2, lines 109-114 and Page 3, lines 56-63).

Regarding Claims 5 and 6, Yokota et al. teach the first and second photo-detector elements as PIN photodiodes (see Page 1, line 129 to Page 2, line 5 and Page 3, lines 4-13).

3. Claims 1-3, 9, 14, 15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Bioss, III et al. US Patent No. 4,513,305.

Regarding Claim 1, Bioss, III et al. teach (see Fig. 1) a sensor comprising a two-color photo-detector (see Col. 1, lines 44-51) having a first photo-detector element (14) capable of absorbing light within a first range of wavelengths (see Col. 3, lines 33-37) and a second photo-detector element (13) capable of absorbing light within a second range of wavelengths (see Col. 3, lines 33-37), said first photo-detector element being in an elevated relation with the second photo-detector element, the first photo-detector element being electrically isolated (see Col. 3, lines 19-21) from said second photo-detector element.

Regarding Claim 14, Bioss, III et al. teach (see Fig. 1) a sensor comprising a two-color photo-detector (see Col. 1, lines 44-51) having a first photo-detector element (14) capable of absorbing light within a first range of wavelengths (see Col. 3, lines 33-37), a second photo-detector element (13) capable of absorbing light within a second range of wavelengths (see Col. 3, lines 33-37), said first photo-detector element being in an elevated relation with the second photo-detector element, and a dielectric layer (18) between said first photo-detector element and said second photo-detector element.

Regarding Claims 2 and 15, Bioss, III et al. teach (see Fig. 1) a substrate (12), said second photo-detector element being formed within said substrate.

Regarding Claim 3, Bioss, III et al. teach (see Fig. 1) a dielectric layer (18) between said first photo-detector element and said second photo-detector element, said dielectric layer electrically isolating said first photo-detector element from said second photo-detector element.

Regarding Claims 9 and 19, Bioss, III et al. teach (see Fig. 1) circuitry (32, 33) for driving the first and second photo-detector elements, said first photo-detector element being in an elevated relation to said circuitry (see Fig. 1).

4. Claims 1, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nozaki et al. US Patent No. 4,677,289.

Regarding Claim 1, Nozaki et al. teach (see Fig. 4) a sensor comprising a two-color photo-detector having a first photo-detector element (42B) capable of absorbing light within a first range of wavelengths (see Col. 8, lines 26-35) and a second photo-detector element (42R) capable of absorbing light within a second range of wavelengths (see Col. 8, lines 26-35), said first photo-detector element being in an elevated relation with said second photo-detector element, said first photo-detector element being electrically isolated from said second photo-detector element (by (44G) and (44R)).

Regarding Claim 7, Nozaki et al. teach (see Fig. 4) a color filter (46) in an elevated relation with said first photo-detector element, said color filter absorbing light within a third range of wavelengths and passing light within said first and second range of wavelengths.

Regarding Claim 8, Nozaki et al. teach (see Fig. 4) a transparent metal conductor layer (44B) between said color filter and said first photo-detector element.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozaki et al.

Nozaki et al. teach the sensor in Claim 1, according to the appropriate paragraph above. Regarding Claim 11, Nozaki et al. teach (see Fig. 4) a first color filter (46) in an elevated relation with said first photo-detector element, said color filter absorbing light within a third range of wavelengths and passing light within said first and second range of wavelengths. Regarding Claim 13, Nozaki et al. teach the first and second photo-detector elements generating first and second color values, respectively (see Col. 9, lines 10-16). Regarding Claims 10-12, Nozaki et al. do not teach a second two-color photo-detector having a third photo-detector element capable of detecting a third range of wavelengths in an elevated relation with a fourth photo-detector element capable of detecting a fourth range of wavelengths and electrically isolated from the fourth photo-detector element (i.e.- a second two-color photo-detector identical to the first two-color photo-detector) and also a second color filter covering the second two-color photo-detector. Regarding Claim 13, Nozaki et al. do not teach a second, third, and fourth two-color photo-detector identical to the first two-color photo-detector. It is well known in the art to use multiple photo-detectors in an array to detect an optical image or pattern. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second, third, and fourth two-color photo-detector identical to the first two-color photo-detector with a second color filter (for Claim 11) in the sensor of Nozaki et al., to capture a visual image or multi-dimensional pattern by using multiple detectors in an array.

7. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokota et al. in view of Nozaki et al.

Yokota et al. teach the sensor in Claim 14, according to the appropriate paragraph above. Yokota et al. also teach (see Fig. 1) a transparent metal conductor layer (31) in top of the first photo-detector element. Yokota et al. do not teach a color filter in an elevated relation with said first photo-detector element absorbing light within a third range of wavelengths and passing light within said first and second ranges of wavelengths and the transparent metal conductor layer between the color filter and the first photo-detector element. Nozaki et al. teach (see Fig. 4) a sensor comprising a two-color photo-detector having a first photo-detector element (42B) capable of absorbing light within a first range of wavelengths (see Col. 8, lines 26-35) and a second photo-detector element (42R) capable of absorbing light within a second range of wavelengths (see Col. 8, lines 26-35), said first photo-detector element being in an elevated relation with said second photo-detector element, said first photo-detector element being electrically isolated from said second photo-detector element (by (44G) and (44R)), along with a color filter (46) in an elevated relation with said first photo-detector element, said color filter absorbing light within a third range of wavelengths and passing light within said first and second range of wavelengths, and a transparent metal conductor layer (44B) between said color filter and said first photo-detector element. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a color filter as taught by Nozaki et al. in the sensor of Yokota et al., to filter extraneous wavelengths of light not desired for detection by the sensor to improve the sensitivity of the photo-detector elements.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (703)306-3441. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703)308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7724 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

SY

May 30, 2003

  
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